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EXAMINER

MEUCCI, MICHAEL D

ART UNIT

PAPER NUMBER

2142

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/966,819

Applicant(s)

JENNY ET AL.

Examiner

Michael D. Meucci

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25,27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to the request for reconsideration filed 15 August 2006.

#### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 25 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- a. Claim 25 contains the limitations "computer readable media" and "computer-readable instructions" which are not limited to statutory subject matter. The applicant's own definition of these terms include: "any media that can be accessed by a computing device" (lines 5-6 on page 5 of specification) and states "communication media typically embodies computer-readable instructions, data structures, program modules, or other data in a modulated signal such as a carrier wave or other transport mechanism and includes any information delivery media" (lines 11-13 on page 5 of the specification). The inclusion of carrier waves, modulated data signals, and any other delivery media make the claim non-statutory. Additionally, "any other delivery media" can be considered nearly anything including paper, which is non-statutory.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-10, 12, 14-17, 19, 21, and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (U.S. 6,370,620 B1) hereinafter referred to as Wu, in view of Scharber (U.S. 6,542,964 B1) and Lamburt et al. (U.S. 6,374,241 B1) hereinafter referred to as Lamburt.

a. As per claim 8, Wu teaches: determining a frequency that static content is requested (lines 52-54 of column 6); when the frequency of requests for static content exceeds a threshold, forwarding the request to the cache (lines 43-59 of column 6); wherein the content is obtained when unavailable in the cache by generating another request for the content and forwards the request to another cache determined by hashing an identifier associated with the static content if the frequency of requests for static content is below the threshold (line 48 of column 4 through line 8 of column 5 and lines 21-28 of column 6).

Wu does not explicitly teach: determining at least one type of the requested content based on a determination of information included within the request. However, Scharber discloses: "By being able to recognize the content type associated with these different requests (e.g., based on the transport protocol or otherwise), ICDS 50 is able to determine which caching protocol is appropriate," (lines 40-43 of column 7). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to determine at least one type of the requested content based on a determination of information included within the request. "That is, ICDS 50 is able to

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make a content deterministic evaluation of the appropriate cache protocol to be used," (lines 43-45 of column 7 in Scharber). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to determine at least one type of the requested content based on a determination of information included within the request in the system as taught by Wu.

Wu does not explicitly teach: a first cache that employs a hot list for access to static content that is separately cached. However, Lamburt discloses: "The Data Query Cache 850, in this embodiment, generally includes a "hot" and "cold" cache," (lines 36-37 of column 27) and the hot and cold caches inherently contain a list of objects in them. It would have been obvious to one of ordinary skill in that art at the time of the applicant's invention to have a first cache that employs a hot list for access to static content that is separately cached. "In this embodiment, the caching technique implemented is the LRU (Least Recently Used) policy by which elements of the cache are selected for replacement in accordance with time from last use. These and other policies are generally known to those skilled in the art. Generally, the "hot" cache may include the most recently used items and the cold cache the remaining items," (lines 37-43 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a first cache that employs a hot list for access to static content that is separately cached in the system as taught by Wu.

b. As per claim 9, Wu teaches: hashing the identifier associated with the content to obtain a value and forwarding the request to a cache associated with the

value when the frequency of requests for static content is below the threshold (line 48 of column 4 through line 8 of column 5 and line 43 of column 6 through line 3 of column 7).

c. As per claim 10, Wu teaches: another request is forwarded to the content server when the content is unavailable from the other cache (lines 4-28 of column 6).

d. As per claims 12 and 25, Wu teaches: a forwarder that receives each request for content and forwards each request to at least one of a content server and a cache (line 48 of column 4 through line 8 of column 5); the content server is coupled to the forwarder wherein the content server sends content to the client in response to each request that is forwarded to the content server and the cache is coupled to the forwarder, wherein the cache sends content to the client in response to each request that is forwarded to the cache (line 48 of column 4 through line 8 of column 5 and lines 21-28 of column 6).

Wu does not explicitly teach: determining at least one type of the requested content based on a determination of the request. However, Scharber discloses: "By being able to recognize the content type associated with these different requests (e.g., based on the transport protocol or otherwise), ICDS 50 is able to determine which caching protocol is appropriate," (lines 40-43 of column 7). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to determine at least one type of the requested content based on a determination of the request. "That is, ICDS 50 is able to make a content deterministic evaluation of the appropriate cache protocol to be used," (lines 43-45 of column 7 in Scharber). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been

motivated to determine at least one type of the requested content based on a determination of the request in the system as taught by Wu.

Wu does not explicitly teach: a plurality of caches including at least one hot cache. However, Lamburt discloses: "The Data Query Cache 850, in this embodiment, generally includes a "hot" and "cold" cache," (lines 36-37 of column 27). It would have been obvious to one of ordinary skill in that art at the time of the applicant's invention to have a plurality of caches including at least one hot cache. "In this embodiment, the caching technique implemented is the LRU (Least Recently Used) policy by which elements of the cache are selected for replacement in accordance with time from last use. These and other policies are generally known to those skilled in the art. Generally, the "hot" cache may include the most recently used items and the cold cache the remaining items," (lines 37-43 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a plurality of caches including at least one hot cache in the system as taught by Wu.

e. As per claims 14-15, Wu teaches: the forwarder is coupled to the content server over a wide area network/local area network; and the forwarder is coupled to the content server over a communications medium (line 47 of column 2 through line 14 of column 3 and Fig. 1).

f. As per claim 16, Wu teaches: the information includes at least one of where the request is generated, the frequency of requests for the content, and the nature of the content requested (lines 16-28 of column 7).

g. As per claim 17, Wu teaches: the forwarder is structured to forward requests to the content server when the information indicated that the request is generated by the regular cache (lines 20-28 of column 6).

h. As per claim 19, Wu teaches: forwarding requests when not found in primary cache (lines 20-28 of column 6).

Wu does not explicitly teach: the forwarder is further structured to forward requests to the regular cache when the information indicates that the request is generated by the hot cache. However, Lamburt discloses: "It should generally be noted that in this particular embodiment, the "hot" cache is implemented as storing the data in random access memory," (lines 48-50 of column 27).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize the "hot" cache as the primary cache in the system of Wu. "This may be distinguished from the storage medium associated with the "cold" cache representing those items which are determined, in accordance with caching policies such as the LRU, to be least likely to be accessed when compared with the items in the hot cache which are determined to be more likely to be accessed," (lines 50-56 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to utilize the "hot" cache of Lamburt as the primary cache in Wu, and to forward the request to the regular cache when the information indicates that the request is generated by the hot cache.



i. As per claim 21, Wu teaches: the server uses a hash table to calculate the number of requests for the content (lines 44-61 of column 1 and line 48 of column 4 through line 8 of column 5).

6. Claims 1, 24, and 27-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout (U.S. 5,566,349) in view of Lamburt and Scharber.

As per claims 1, 24, and 27-28, Trout teaches: receiving a request for content from a client (lines 35-37 of column 4 and lines 19-28 of column 42) and determining at least one type of the requested content based on information included within the request (lines 39-42 of column 11, lines 61-64 of column 27, and lines 31-34 of column 28); when the type of the requested content is dynamic, forwarding the request to a content server that enables access to the dynamic content (lines 10-11 of column 12); and when the type of the requested content is static, forwarding the request to a cache that enables access to the static content (lines 11-12 of column 12).

Trout does not explicitly teach: a plurality of caches including at least one hot cache that is based at least in part on a higher frequency of request over a period of time. However, Lamburt discloses: "The Data Query Cache 850, in this embodiment, generally includes a "hot" and "cold" cache," (lines 36-37 of column 27). It would have been obvious to one of ordinary skill in that art at the time of the applicant's invention to have a plurality of caches including at least one hot cache. "In this embodiment, the caching technique implemented is the LRU (Least Recently Used) policy by which elements of the cache are selected for replacement in accordance with time from last

use. These and other policies are generally known to those skilled in the art. Generally, the "hot" cache may include the most recently used items and the cold cache the remaining items," (lines 37-43 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a plurality of caches including at least one hot cache in the system as taught by Trout.

Trout does not explicitly teach: determining at least one type of the requested content based on a determination of the request. However, Scharber discloses: "By being able to recognize the content type associated with these different requests (e.g., based on the transport protocol or otherwise), ICDS 50 is able to determine which caching protocol is appropriate," (lines 40-43 of column 7). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to determine at least one type of the requested content based on a determination of the request. "That is, ICDS 50 is able to make a content deterministic evaluation of the appropriate cache protocol to be used," (lines 43-45 of column 7 in Scharber). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to determine at least one type of the requested content based on a determination of the request in the system as taught by Trout and Lamburt.

7. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout, Lamburt, and Scharber, further in view of Factor et al. (U.S. 6,094,706 B1) hereinafter referred to as Factor.

Trout does not explicitly teach: the hot cache caches static content when a frequency of requests for the static context exceeds a threshold. However, Factor discloses: "Once a particular component has been accessed more than a threshold number of times, new pathnames that contain this component may be added to the °cache," (lines 52-54 of column 11 ).

It would have been obvious to one of ordinary skill in that art to have the hot cache cache static content when a frequency of requests for the static context exceeds a threshold. "This component may be added to the cache under the assumption that the new pathnames will also be accessed frequently," (lines 54-56 of column 11 in Factor). It is for this reason that one of ordinary skill in that art at the time of the applicant's invention would have been motivated to have the hot cache cache static content when a frequency of requests for the static context exceeds a threshold in the system as taught by Trout, Lamburt, and Scharber.

8. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout, Lamburt, and Scharber, further in view of Guenther et al. (U.S. 5,590,301) hereinafter referred to as Guenther.

Trout does not explicitly teach: when the static content is unavailable in the hot cache, forwarding the request to another cache in the plurality of caches. However, Guenther discloses: "an internal address, including a cluster number, is sent to the address translator 18 as a request from the primary cache directed to the secondary cache 7 (which, of course, will forward the request to main memory if the requested

information is not resident in the secondary cache at the time of the request)," (lines 21-26 of column 7).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to forward the request to another cache when the static content is unavailable in the hot cache. "Register 15 is merely a convenient representation of address interface circuitry in the primary cache of the CPU 11 by which an address generated by the CPU 11 may be transmitted, transformed in the address translator 18, as a request to the secondary cache 7. This condition occurs when information required by the CPU 11 is not resident in at least one of the primary caches of the CPUs 11, 12, 13, 14 on the multiprocessor board 1. (Those skilled in the art will understand that, in many such multiprocessor configurations, it is possible for one CPU to "siphon" information from another CPU's primary cache)," (lines 18-28 of column 4 in Guenther). It is for this reason that one of ordinary skill in that art at the time of the applicant's invention would have been motivated to forward the request to another cache when the static content is unavailable in the hot cache in the system as taught by Trout, Lamburt, and Scharber.

9. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout, Lamburt, and Scharber, further in view of McCanne (U.S. 6,785,704 B1). Trout does not explicitly teach: when the static content is unavailable from any one of the plurality of caches, forwarding the request to the content server that enables access to the static content. However, McCanne discloses: "the cache serves the request, if it can, or

forwards the request to the content server and then serves the client the content returned from the content server." (lines 63-65 of column 3).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to forward the request to the content server that enables access to the static content when the static content is unavailable from any one of the plurality of caches. "Caching can be either transparent or nontransparent. With transparent caching, the client makes a request of the content server and the network infrastructure intercepts the request if the cache can serve the request. With nontransparent caching, the client makes the request of the cache (or more precisely, of a network node to which the cache is attached) and the cache serves the request, if it can, or forwards the request to the content server and then serves the client the content returned from the content server," (lines 57-65 of column 3 in McCanne). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to forward the request to the content server that enables access to the static content when the static content is unavailable from any one of the plurality of caches in the system as taught by Trout, Lamburt, and Scharber.

10. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout, Lamburt, and Scharber, further in view of Kimura et al. (U.S. 6,415,359 B1) hereinafter referred to as Kimura.

Trout does not explicitly teach: examining the request for an extension indicating that a process is performed in response to the request, wherein the process includes at

least one of an application program and a script. However, Kimura discloses: "in the case of creating a new file in the portable information processing terminal device 10 in response to a request from another information processing device, the file management unit 102 first checks the attribute information (an extension and a file name, or other ID information indicating a file type, etc.) of that file which is attached to the creation request (step \$71), and judges whether it is a file that should be stored into the cache 17 or not (step \$72)o An application program file that is executable on the portable information processing terminal device 10 or a file that can be processed by that application has a high probability of being accessed in the disk access prohibited state during the battery driven mode so that such a file will be judged as a file that should be stored into the cache 17," (lines 49-62 of column 13).

It would have been obvious to one of ordinary skill in that art at the time of the applicant's invention to examine the request for an extension indicating that a process is performed in response to the request, wherein the process includes at least one of an application program and a script. "An application program file that is executable on the portable information processing terminal device 10 or a file that can be processed by that application has a high probability of being accessed in the disk access prohibited state during the battery driven mode so that such a file will be judged as a file that should be stored into the cache 17. In the case where the judgment cannot be made, it is also possible to inquire the user as to whether it is a file that should be stored into the cache 17 or not," (lines 57-65 of column 13 in Kimura). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been

motivated to examine the request for an extension indicating that a process is performed in response to the request, wherein the process includes at least one of an application program and a script in the system as taught by Trout, Lamburt, and Scharber.

11. Claims 6-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout, Lamburt, and Scharber, further in view of Dujari (U.S. 6,233,606 B1).

Trout does not explicitly teach: the content includes information associated with a plurality of resource identifiers; and the resource identifiers are uniform resource locators (URLs). However, Dujari discloses: "the content can be indexed by a unique lookup key, such as a Uniform Resource Identifier (URI), a compact string of characters for identifying an abstract or physical resource. Examples of URIs include URLs (Uniform Resource Locators), URNs (Uniform Resource Names), and other standard namespaces," (lines 28-33 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the content include information associated with a plurality of resource identifiers; and have the resource identifiers as uniform resource locators (URLs). "A URI may be used as the lookup key to a cache, as can other names, such as a globally unique identifier (GUID)," (lines 33-35 of column 1 in Dujari). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the content include information associated with a plurality

of resource identifiers; and have the resource identifiers as uniform resource locators (URLs) in the system as taught by Trout, Lamburt, and Scharber.

12. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu and Scharber as applied to claim 10 above, in view of Cohen et al. (U.S. 6,330,561 B1) hereinafter referred to as Cohen.

Wu teaches: another request is forwarded to the content server when the content is unavailable from the other cache (lines 4-28 of column 6).

Wu does not explicitly teach: the content server forwards the other request for content to an additional cache. However, Cohen discloses: "Then the proxy server would forward a request for validation with respect to the client requested resource and a request for validation with regard to one or more additional resources in the proxy cache that were from the same resource server," (lines 30-34 of column 2).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the content server forward the other request for content to an additional cache. "This approach is a benefit to the proxy cache in the sense that it helps the proxy cache determine the validity of certain of its contents at an earlier time," (lines 38-40 of column 2 in Cohen). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the content server forward the other request for content to an additional cache in the system as taught by Wu and Scharber.



13. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu, Scharber, and Lamburt as applied to claim 12 above, in view of Cohen and Sharma (U.S. 6,591,341 B1).

Wu teaches: a regular cache and forwarding requests if content is not found in cache.

Wu does not explicitly teach: a hot cache and an additional cache, wherein the hot cache, the regular cache, and the additional cache are arranged in a hierarchical order for receiving each forwarded request for content from the forwarder.

However, Lamburt discloses: "It should generally be noted that in this particular embodiment, the "hot" cache is implemented as storing the data in random access memory," (lines 48-50 of column 27). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have a hot cache. "This may be distinguished from the storage medium associated with the "cold" cache representing those items which are determined, in accordance with caching policies such as the LRU, to be least likely to be accessed when compared with the items in the hot cache which are determined to be more likely to be accessed," (lines 50-56 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a hot cache in the system as taught by Wu and Scharber.

Cohen discloses: "Then the proxy server would forward a request for validation with respect to the client requested resource and a request for validation with regard to

one or more additional resources in the proxy cache that were from the same resource server," (lines 30-34 of column 2). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have an additional cache. "This approach is a benefit to the proxy cache in the sense that it helps the proxy cache determine the validity of certain of its contents at an earlier time," (lines 38-40 of column 2 in Cohen). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have an additional cache in the system as taught by Wu, Scharber, and Lamburt.

Sharma discloses: "If the request was a cache miss in the second data array, the request may be forwarded to another level of memory hierarchy, such as another cache or a system memory (lines 32-35 of column 5 and Fig. 5). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to arrange the cache in a hierarchical order for receiving each forwarded request for content from the forwarder. "In either case, when it was determined that there was a cache miss in the first data array, the one or more instructions that were tentatively processed may be replayed," (lines 35-37 of column 5 in Sharma). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to arrange the cache in a hierarchical order for receiving each forwarded request for content from the forwarder in the system as taught by Wu, Scharber, Lamburt, and Cohen.

14. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu, Scharber, and Lamburt as applied to claim 16 above, in view of Factor.

Wu does not explicitly teach: the forwarder is further structured to forward requests to the hot cache when the information indicates that the rate of requests exceeds a threshold.

However, Lamburt discloses: "It should generally be noted that in this particular embodiment, the "hot" cache is implemented as storing the data in random access memory," (lines 48-50 of column 27). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to forward requests to a hot cache. "This may be distinguished from the storage medium associated with the "cold" cache representing those items which are determined, in accordance with caching policies such as the LRU, to be least likely to be accessed when compared with the items in the hot cache which are determined to be more likely to be accessed," (lines 50-56 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to forward requests to a hot cache in the system as taught by Wu and Scharber.

Factor discloses: "Once a particular component has been accessed more than a threshold number of times, new pathnames that contain this component may be added to the cache," (lines 52-54 of column 11).

It would have been obvious to one of ordinary skill in that art to forward requests to a hot cache when the rate of requests exceeds a threshold. "This component may be added to the cache under the assumption that the new pathnames will also be

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accessed frequently," (lines 54-56 of column 11 in Factor). It is for this reason that one of ordinary skill in that art at the time of the applicant's invention would have been motivated to forward requests to a hot cache when the rate of requests exceeds a threshold in the system as taught by Wu, Scharber, and Lamburt.

15. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu, Scharber, and Lamburt as applied to claim 12 above, in view of Sharma.

Wu does not explicitly teach: the hot cache and the regular cache are located on the same device.

However, Lamburt discloses: "The Data Query Cache 850, in this embodiment, generally includes a "hot" and "cold" cache," (lines 36-37 of column 27). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize the "hot" cache as the primary cache in the system of Wu. "This may be distinguished from the storage medium associated with the "cold" cache representing those items which are determined, in accordance with caching policies such as the LRU, to be least likely to be accessed when compared with the items in the hot cache which are determined to be more likely to be accessed," (lines 50-56 of column 27 in Lamburt). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to utilize the "hot" cache of Lamburt as the primary cache in Wu and Scharber.

Sharma discloses: "Many computer, systems use multiple levels of caches to cache data from a memory device. For example, a computer system may have a level

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one cache (L1) and a larger level two cache (L2), in addition to an even larger RAM memory," (lines 14-17 of column 1). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have multiple caches on the same device. "The L1 cache typically contains a copy of information that was previously loaded from RAM by the processor, and the L2 cache typically contains both a copy of information in the L1 cache and other information that had been loaded from RAM by the processor less recently than the information in the L1 cache," (lines 18-24 of column 1 in Sharma). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have multiple caches on the same device in the system as taught by Wu, Scharber, and Lamburt.

16. Claims 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu and Scharber as applied to claim 12 and 22 respectively, in view of Dujari.

Wu does not explicitly teach: the content includes information associated with a plurality of resource identifiers; and the resource identifiers are uniform resource locators (URLs). However, Dujari discloses: "the content can be indexed by a unique lookup key, such as a Uniform Resource Identifier (URI), a compact string of characters for identifying an abstract or physical resource. Examples of URIs include URLs (Uniform Resource Locators), URNs (Uniform Resource Names), and other standard namespaces," (lines 28-33 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the content include information associated with a plurality

of resource identifiers; and have the resource identifiers as uniform resource locators (URLs). "A URI may be used as the lookup key to a cache, as can other names, such as a globally unique identifier (GUID)," (lines 33-35 of column 1 in Dujari). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the content include information associated with a plurality of resource identifiers; and have the resource identifiers as uniform resource locators (URLs) in the system as taught by Wu and Scharber.

### ***Response to Arguments***

17. Applicant's arguments filed 15 August 2006 have been fully considered but they are not persuasive.

18. (A) Regarding claim 8, the applicant contends that Wu nor Scharber, alone or in combination suggest determining a frequency of requests for static content, wherein a determination of information included within the request determines a static type of the requested content. The examiner respectfully disagrees.

As to point (A), the applicant argues that Wu is directed towards controlling cache misses in web caches, not hot caches based on frequency thresholds. The examiner points to lines 21-28 of column 6 in Wu which discloses: "In such a case and if a web cache server 4 decides not to redirect, block 704, the web cache server 4 checks if the requested object can be found in its cache, using the lookup function described in FIG. 3. If yes, block 706, the object is returned to the requesting browser 0. If not, block

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705, the object is fetched from the originating web server 1 and a copy of it is stored in the cache using the function described in FIG. 4." Checking the cache to see if an object is present is clearly determining a frequency and the inclusion of Lamburt and obviated the newly added limitation of a hot list or hot cache. See rejection for citation. Accordingly, the rejection is proper and is maintained by the examiner.

19. (B) Regarding claim 9, the applicant contends that Wu does not teach hashing the identifier associated with the content to obtain a value and forwarding the request to a cache associated with the value when the frequency of request for the static content is below the threshold. The examiner respectfully disagrees.

As to point (B), the applicant argues that Wu instead teaches that the web cache server determines whether it is the partition owner before deciding whether to service or forwards a request. The examiner points to the cited portions of Wu which describe a hashing function which identifies the owner of a requested object and forwards the request to the object owner (line 48 of column 4 through line 8 of column 5); and additionally describes forwarding the request to a cache associated with the hash value when the frequency of request for static content is below the threshold (line 43 of column 6 through line 3 of column 7). These two sections of Wu clearly teach the claimed limitations. As such, the rejection remains proper and is maintained by the examiner.

20. (C) Regarding claim 1, the applicant contends that Trout does not teach determining at least one type of requested content based on a determination of information included within the request. The examiner respectfully disagrees.

As to point (C), the applicant argues that Trout instead teaches identifying the source, class and type of data formats of incoming data rather than determining a type of requested content based on information in the request. The examiner points to lines 31-34 of column 28 which discloses: "The knowledge base will use existing Reference Data and current target or signature data to attempt to perform identification of the request." The use of "current target" data to perform identification of the request must be taken from the request and thereby teaches the limitations as claimed. As such the rejection is proper and is maintained by the examiner.

21. (D) Regarding claim 1, the applicant contends that Trout does not teach a hot cache based on a frequency threshold. The examiner points out that utilization of hot caches was obviated with the inclusion of the Lamburt reference.

22. (E) Regarding claim 1, the applicant contends that Trout does not teach that a request for data should be forwarded to a server when the type of the requested content is dynamic and forwarded to a cache when the type of the requested content is static. The examiner respectfully disagrees.

As to point (E), the applicant argues that both dynamic and static data are retrieved from the DS cache memory. The examiner point out that the applicant makes



no distinction between a cache and a content server. Both the cache and the content server are capable of performing the same function in the invention and thereby can be considered equivalent. The examiner also notes that on lines 22-32 of column 32 in Trout disclose: "Data being processed is subdivided into Dynamic and Static Data. All static data shall be entered during planned operations, is a one time entry and is persistent data. The Dynamic Data shall include the input parameters, their calculated components parameters from the KB and other changing data. The IO shall define the data storage requirements for each IO data parameter, a part of the C3M2 Dynamic and Static Records. Data storage and exchange requirements will include the Dynamic Data, the Static Data, the RDB or field formats, output formats, data and display parameters." This portion of Trout, along with the archive memory discussed in lines 22-31 of column 12 in Trout clearly teach that the dynamic and static memory can and are stored in different locations, making it clear that requests are forwarded to both cache and content servers for static and dynamic content respectively. As such, the rejection remains proper and is maintained by the examiner.

### ***Conclusion***

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ponte (U.S. 7,047,242 B1) discloses weighted term ranking for online queries and hot caches.

Kausik (U.S. 7,047,281 B1) discloses accelerating the delivery of content in a network using caching methods and forwarding requests to a content server.

Dugan et al. (U.S. 7,061,923 B2) discloses managing resources at service nodes in a network and hot caches.

Teodosiu et al. (U.S. 7,072,982 B2) discloses hot caches.

Lewin et al. (U.S. 7,096,266 B2) discloses internet content delivery and hot caches.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell, can be reached at (571) 272-3868. The fax phone number for this Group is 571-273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**BEATRIZ PRIETO  
PRIMARY EXAMINER**